

AMENDMENTS TO THE CLAIMS:

This listing of claims replaces all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) An optical element having wavelength selectivity comprising:
a lens array having a first end face and a plurality of lenses arranged on the first end face;
and
a multi-layered film filter which is formed on the first end face of the lens array and includes high refractive-index dielectric layers and low refractive-index dielectric layers laminated alternately and whose film thickness continuously changes in accordance with positions of the individual lenses.
2. (Previously Presented) The optical element according to Claim 1, wherein the plurality of lenses are aligned in a line from a first end of the first end face of the lens array toward a second end of the first end face and the film thickness of the multi-layered film filter linearly changes from the first end toward the second end.
3. (Previously Presented) The optical element according to Claim 1, wherein the end array is a rod lens array including a plurality of rod lenses.
4. (Currently Amended) The optical element according to Claim 1, wherein the lens array is a gradient index planar microlens [including] on a single substrate, the lens array having [and] a plurality of microlenses formed [in a line] on the substrate.
5. (Previously Presented) The optical element according to Claim 4, wherein the plurality of microlenses protrude from the substrate.

6. (Previously Presented) The optical element according to Claim 1, wherein the lens array has a second end face facing the first end face; and

the optical element further has a light emitting device formed on the second end face for emitting light toward the multi-layered film filter via individual lenses of the lens array.

7. (Previously Presented) The optical element according to Claim 6, wherein the light emitting device is integral with the lens array.

8. (Previously Presented) The optical element according to Claim 6, wherein the light emitting device includes a plurality of light sources provided in association with individual lenses of the lens array.

9. (Previously Presented) The optical element according to Claim 1, wherein the lens array has a second end face facing the first end face; and

the optical element further has a plurality of light receiving elements formed on the second end face for respectively receiving a plurality of optical signals having different center wavelengths, obtained by demultiplexing input light by the multi-layered film filter, via individual lenses of the lens array.

10. (Previously Presented) The optical element according to Claim 9, wherein the plurality of light receiving elements are integral with the lens array.

11. (Previously Presented) A method of manufacturing an optical element having wavelength selectivity, comprising:

a step of preparing a lens array having a first end face and a plurality of lenses arranged on the first end face; and

a step of directly forming a multi-layered film filter on the first end face of the lens array by a physical vapor deposition method in such a way that the film thickness continuously changes in accordance with positions of the plurality of individual lenses.

12. (Previously Presented) The optical element manufacturing method according to Claim 11, further comprising:

a step of arranging the lens array in such a way that the first end face of the lens array is inclined with respect to an evaporation source or a target, prior to the step of forming the multi-layered film filter.

13. (Previously Presented) The optical element manufacturing method according to Claim 12, further comprising:

a step of arranging a film thickness correcting plate having a substantially trapezoidal opening portion between the lens array and the evaporation source or target, prior to the step of forming the multi-layered film filter

14. (New) An optical element having wavelength selectivity comprising:

a lens array having a first end face and a plurality of lenses arranged on the first end face, each lens having an optical axis that is substantially normal to the first end face, wherein the lens array has a second end face facing the first end face;

a multi-layered film filter which is formed on the first end face of the lens array and includes high refractive-index dielectric layers and low refractive-index dielectric layers laminated alternately and whose film thickness continuously changes in accordance with positions of the individual lenses; and

a plurality of light receiving elements formed on the second end face for respectively receiving a plurality of optical signals having different center wavelengths, obtained by demultiplexing input light by the multi-layered film filter, via individual lenses of the lens array.

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Serial No. : 10/070,708
Filed : March 12, 2002
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Attorney's Docket No.: 13630-
004US1 / P3P2001052US

15. (New) The optical element according to claim 14, wherein the plurality of light receiving elements are integral with the lens array.